

IN THE CLAIMS:

1 1. (Cancelled)

1 2. (Currently Amended) A method of providing conferencing resources in an ex-
2 pandable telecommunications system having a plurality of nodes, and a host cou-
3 pled to at least one node for controlling the system in which conferencing re-
4 sources are utilized by one or more nodes participating in a conference, the
5 method including the steps of:

6 (A) providing the plurality of nodes with means for connecting and discon-
7 necting communications paths between a plurality of ports having digital network/line
8 interfaces that couple the node with the PSTN and private networks, said nodes including
9 switching nodes that can switch communications to any port connected to the system, and
10 at least two of said switching nodes being conferencing nodes, said conferencing nodes
11 including individual digital signal processing (DSP) circuits programmed to perform a
12 conference between three or more participants who are callers connected at any port in
13 the system and said conferencing nodes are also capable of switching communications,
14 including conferenced output to any other port interfaced with the system from the PSTN
15 and private networks, and said switching nodes , including said conferencing nodes, hav-
16 ing switching buses on which that node is assigned time slots for transmitting and receiv-
17 ing data and control information and said switching nodes, including said conferencing
18 nodes, being connected in communicating relationship by an inter-nodal network;

19 (B) defining a requested conference as being of one of a dynamic conference type,
20 a critical conference type and a static conference type;

21 (C) identifying the DSP circuit within a conferencing node that [[has]] satisfies at
22 least one of the following:

- 23 (i) the greatest amount of available channels in said system so that the
24 conference can grow as large as possible;
25 (ii) is currently handling no other conferences so that all channels are
26 available for use by the conference;
27 (iii) has a “best fit” such that the system can attempt to fit as many con-
28 ferences as possible on a single DSP chip before assigning confer-
29 ences to another DSP chip;

30 [[available resources for performing a conferencing function for a conference of
31 that type as requested in the system]]; and

32 (D) after one or more of said DSP circuit [[has]] have been identified, determin-
33 ing whether the node in which said identified DSP circuit is located has sufficient avail-
34 able time slots on its switching bus to manage the data to and from all of the participants
35 in the requested conference.

1 3. (Currently Amended) [[The method of providing conferencing resources as de-
2 defined in claim 2, including the further step of]] A method of providing conferencing re-
3 sources in an expandable telecommunications system having a plurality of nodes, and a
4 host coupled to at least one node for controlling the system in which conferencing re-
5 sources are utilized by one or more nodes participating in a conference, the method in-
6 cluding the steps of:

7 (A) providing the plurality of nodes with means for connecting and discon-
8 necting communications paths between a plurality of ports having digital network/line
9 interfaces that couple the node with the PSTN and private networks, said nodes including
10 switching nodes that can switch communications to any port connected to the system, and
11 at least two of said switching nodes being conferencing nodes, said conferencing nodes
12 including individual digital signal processing (DSP) circuits programmed to perform a

13 conference between three or more participants who are callers connected at any port in
14 the system, and said switching nodes having switching buses on which that node is as-
15 signed time slots for transmitting and receiving data and control information and said
16 switching nodes being connected in communicating relationship by an inter-nodal net-
17 work;

18 (B) defining a requested conference as being of one of a dynamic conference type,
19 a critical conference type and a static conference type, including determining conference
20 type by employing statistical analysis and/or historical data about past system conference
21 behavior in said statistical analysis to predict conference type; [[to determine conference
22 type]]

23 (C) identifying the DSP circuit within a conferencing node that has available re-
24 sources for performing a conferencing function for a conference of that type as requested
25 in the system]; and

26 (D) after said DSP circuit has been identified, determining whether the node in
27 which said identified DSP circuit is located has sufficient available time slots on its
28 switching bus to manage the data to and from all of the participants in the requested con-
29 ference.

1 4. (Cancelled)

1 5. (Previously Presented) The method of providing conferencing resources as de-
2 fined in claim 2, including the further step of employing user-defined parameters to de-
3 termine conference type.

1 6. (Currently Amended) The method of providing conferencing resources as defined
2 in [[claim 2]] claim 3, including the further step of using historical information about an
3 average conference generally handled by a particular system and handled at a particular
4 port to predict conference type.

1 7. (Previously Presented) The method of providing conferencing services as defined
2 in claim 2, including the further step of defining as said dynamic conference a conference
3 that is likely to change in size based upon predetermined criteria.

1 8. (Previously Presented) The method of providing conferencing services as defined
2 in claim 7, including the further step of assigning the DSP circuit card having the maxi-
3 mum available capacity to a conference which has been identified as a dynamic confer-
4 ence.

1 9. (Previously Presented) The method of providing conferencing services as defined
2 in claim 8, including the further step of selecting for a dynamic conference the DSP cir-
3 cuit in the system having as many channels as possible such that a conference can grow
4 as large as possible and that channels remain available for participants who join the con-
5 ference while in progress.

1 10. (Previously Presented) The method of providing conferencing services as defined
2 in claim 2 including the further step of defining as said critical conference a conference
3 that requires the maximum opportunity for growth in the system.

1 11. (Currently Amended) The method of providing conferencing services as defined
2 in claim 10 including the further step of selecting, for a critical conference, the DSP cir-
3 cuit with the maximum available capacity and instructing the DSP circuit with said
4 maximum available capacity to reserve these conference resources and to es-
5 tablish the conference, and further instructing the DSP circuit to block other conferences
6 from being assigned to that DSP circuit such that capacity remains available for that criti-
7 cal conference, for the life of that critical conference.

1 12. (Previously Presented) The method of providing conferencing services as defined
2 in claim 11 including the further step of revealing blocked channels for use by the DSP
3 circuit, after the critical conference is finished.

1 13. (Previously Presented) The method of providing conferencing services as defined
2 in claim 2, including the further step of defining as said static conference a conference in
3 which the number of participants will remain substantially constant.

1 14. (Previously Presented) The method of providing conferencing services as defined
2 in claim 13, including the further step of assigning a static conference to a DSP circuit on
3 a "best fit" basis.

4 15. (Currently Amended) [[The method of providing conferencing services as defined
5 in claim 2, the method including the steps of:]] A method of providing conferencing re-
6 sources in an expandable telecommunications system having a plurality of nodes, and a
7 host coupled to at least one node for controlling the system in which conferencing re-
8 sources are utilized by one or more nodes participating in a conference, the method in-
9 cluding the steps of:

10 (A) providing said telecommunications system with a line-to-switch
11 (LSD) data bus comprised of multiple individual bus conductors, each bus conductor car-
12 rying time slots coming into the node from line cards, including T1 line cards, and said
13 system further including a switch-to-line (SLD) data bus comprised of multiple individ-
14 ual bus conductors that carry time slots of PCM-encoded data from a nodal switch in the
15 node back out to a destination line card; [[and]]

16 (B) defining a requested conference as being of one of a dynamic confer-
17 ence type, a critical conference type and a static conference type;

18 (C) identifying the DSP circuit within a conferencing node that has avail-
19 able resources for performing a conferencing function for a conference of the type re-
20 quested;

21 (D) identifying a zone of time slots having the lowest order of alloca-
22 tion such that it is least likely to be taken when a new T1 card is inserted into the system
23 during operation, and assigning a conferencing node to use these lowest orders of alloca-
24 tion time slots for a requested conference.

- 1 16. (Previously Presented) The method of providing conferencing resources as de-
2 fined in claim 15, including the step of:
- 3 (a) allocating zones of time slots in such a manner that 192 time slots of a T1
4 span are divided into the following segments:
- 5 time slots 0-191 are in the regular T1 channel;
6 time slots 192-215 are the lower dead zone;
7 time slots 216-223 are in the lower small dead zone;
8 time slots 224-247 are in the upper large dead zone; and
9 time slots 248-255 are in the upper small dead zone; and
- 10 (b) assigning time slots in the lower and upper small dead zones of the indi-
11 vidual bus conductors to conferences.

1 17. (Currently Amended) An expandable telecommunications system having means
2 for conferencing three or more participants interfaced with the system the system com-
3 prising,

4 (A) a plurality of nodes for performing telecommunications switching, each of
5 said switching nodes including means for dynamically connecting or disconnecting
6 communication paths with respect to various ones of a plurality of ports, means for time
7 switching information to or from said ports, means for coupling the node with the PSTN
8 and private networks via digital network/line interfaces, said nodes including switching
9 nodes that can switch communications to any port connected to the system via the PSTN
10 and private networks, and means for transmitting and receiving information in packetized
11 forms, and means connected in communicating relationships including a bus for carrying
12 data to and from said ports;

13 (B) a host connected in communicating relationship with at least one of said
14 switching nodes, said host controlling predetermined operations of the system;

15 (C) means in said switching nodes for generating and sending a message request-
16 ing establishment of a conference call for at least three conferees connected to one or
17 more of said nodes;

18 (D) means for interconnecting said switching nodes in communicating relation-
19 ships and operable in conjunction with said transmitting and receiving means to transfer
20 said packetized information such that information which originates from any port in the
21 switching nodes is substantially continuously communicable to any node interfaced with
22 said interconnecting means;

23 (E) at least one conferencing node for providing conferencing services, said at
24 least one conferencing node interfaced with said interconnecting means and including
25 individual DSP circuits, said conferencing node also having means for switching com-
26 munications, including conferenced output to any other port interfaced with the system
27 from the PSTN and private networks; and

28 (F) means for allocating conferencing resources including:

29 1. means for determining whether a DSP circuit in a conferencing
30 node has available conferencing resources to perform a requested conference; and

31 2. means for determining whether the conferencing node has suffi-
32 cient available time slots on its switching buses to manage the data to and from the con-
33 ferences or a particular requested conference.

1 18. (Previously Presented) The expandable telecommunications system as defined in
2 claim 17 further comprising:

3 A. a DSP card in said conferencing node, including:

4 1. a DSP module which contains a plurality of DSP circuits; and

5 2. a CPU including means for receiving messages about conferences
6 to be established, and means for routing voice information to a DSP chip identified for a
7 particular conference; and

8 B. line-to-switch (LSD) data bus interfaced with line cards which connect
9 ports in the system, and which carries a PCM-encoded voice information from the line
10 cards to said DSP cards.

1 19. (Previously Presented) The expandable telecommunications system as de-
2 fined in claim 18 wherein said voice information for paid conference arrives at a port
3 coupled with one or more of the following:

4 a. a landline telephone;

5 b. the PSTN;

6 c. a private network;

7 d. a wireless network; and

8 e. the Internet.